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| 09/602,345      | 06/23/2000  | William S. Oakley    | 053313.P017         | 1324             |

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EXAMINER

PHAM, HAI CHI

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/602,345

Applicant(s)

OAKLEY, WILLIAM S.

Examiner

Hai C Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8,11-13,15,16 and 19 is/are rejected.
- 7) ☒ Claim(s) 3,4,9,10,14,17,18,20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities:
  - The following limitation "each modulatable light source formed as a Vertical cavity Surface Emitting Lasers" at lines 3-4 should read --each modulatable light source of which is formed as a Vertical cavity Surface Emitting Lasers --. Since both reading and writing arrays comprise modulatable light sources, the above correction would indicate that the referred "modulatable light source" is interpreted without ambiguity as being part of the reading array, and not of both arrays.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5-8, 11, 12, 13, 15, 16, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiske (U.S. 6,078,468).

Fiske discloses a data storage and retrieval apparatus having a read and/or write head, which comprises a linear arrangement of vertical Cavity Surface Emitting Lasers

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(92), an objective lens (microlens array 96 including focusing lens 98) for each VCSEL, and a detector (94) to receive a set of one or more beams emanated from the reading array of VCSEL and reflected from the target medium (disk 48).

Fiske further suggests that multiple heads can be used for reading and writing where "the read laser beam is of different frequency than the write laser beam" (col. 15, lines 21-25). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Fiske to implement separate arrays for writing and reading such that the writing array comprises a first array of VCSELs and the reading array a second array of VCSELs, the implementation of which would require only routine skill in the art.

Fiske further teaches the modulatable light sources (92) being spaced at regular intervals (Fig. 5A), the intervals being preferably about 100  $\mu\text{m}$  (col. 9, lines 54-58), the writing array of modulatable light sources positioned at an angle relative to a direction of movement of the target medium, and being associated with a separate path on the target medium (Fig. 11A).

***Allowable Subject Matter***

4. Claim 22 is allowed.
5. Claims 3, 4, 9, 10, 14, 17, 18, 20, 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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6. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record discloses the combined claimed features related to an optical recording system, which comprises a writing array of VCSELs and a separate reading array of VCSELs, both of which are embedded in a common substrate, an objective lens positioned relative to the writing array and the reading array, and a detector to receive a set of one or more beams emanated from the reading array of VCSEL and reflected from the target medium.

On the other hand, none of the prior art made of record discloses a writing array of VCSELs and a reading array of VCSELs, a dichroic polarizing beam-splitter positioned to receive the light beams from each of the writing and reading arrays of VCSELs, a circularly polarizing plate coupled to an exit end face of the polarizing beam-splitter, an achromatic objective lens positioned to receive the light beams exiting the circularly polarizing plate for focusing the light beams on the target medium, at least one adjustment device coupled to the objective lens to adjust a position of the objective lens, and a detection system positioned to receive the light beams reflected from the target medium for providing data to control the adjustment device. It is the combination of the above limitations, which is not taught or suggested by the prior arts of record, that makes the claims allowable.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1, 2, 5-8, 11, 12, 13, 15, 16, 19 have been considered, and are traversed in view of the new ground of rejection as stated above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM  
PRIMARY EXAMINER

October 31, 2002